UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,052	04/06/2001	Geetha Srikantan	SUN-P4965-MDL	5768

22200 7590 02/03/2005

PARK, VAUGHAN & FLEMING LLP
702 MARSHALL STREET
SUITE 310
REDWOOD CITY, CA 94063

EXAMINER	
PATEL, HARESH N	
ART UNIT	**PAPER NUMBER**
2154	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,052	SRIKANTAN ET AL.	
	Examiner	Art Unit	
	Haresh Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 are presented for examination.

Priority

2. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the limitations, "registering a first plurality of sockets", "invoking a task configured to facilitate handling of the first event received at the first socket in the plurality of sockets", "first processor thread is shared among the first plurality of sockets", "processor threads are allocated to the execution of tasks invoked", "host connections with multiple clients simultaneously", "adjust the media stream according to media stream quality information", "single event consumer interface class", "processor resources within the server are allocated in the form of threads", "issuing tasks configured to execute media streaming command", "set of threads is allocated to the tasks", "first collection of sockets include the third socket", "commands from multiple different clients", "data structure comprising plurality of socket identifiers", "processor thread is dedicated to the polling of the first set of sockets", "processor thread is shared among the plurality of sockets for detecting the events", "a set of processor threads is allotted to the execution of the tasks invoked", "connection module is a program object generated from a program object class configured to receive media streaming events", etc., do not exist in the priority document, 09/828052. Hence, the claims do not benefit the effective date of the priority document.

Specification

3. The disclosure is objected. Some of the informalities are:

i. The section "CROSS-REFERENCE TO RELATED APPLICATIONS" is missing claimed priority, co-pending applications and related arts.

ii. Unless the invention is created from scratch, applicant needs to provide all the prior arts that have led to the invention, i.e., existing patents and publications related to the claimed subject matter. In response, applicant is requested to provide the title, citation and copy of each publication related to the claimed subject matter. For each publication, please provide a concise explanation of that publication's contribution to the description of the prior art. Specifically, applicant is requested to the specified prior art information in the background of the invention section of the specification, page 1 line 18 – page 2 line 10.

Appropriate correction is required.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The present title is not sufficient for proper classification of the claimed subject matter.

5. The abstract is objected. Some of the informalities are:

a. The abstract should not contain term "may be".

Appropriate correction is required.

Drawings

6. New corrected drawings are required in this application because Figures 1-5 do not reflect the claimed invention, for example, figures fail to show "first plurality of sockets registered with polling module", "second plurality of sockets", "processor thread shared among plurality of sockets", etc. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

7. Claims 4 and 5 are objected to because of the following informalities:

Claim 4 contains, "said event consumers is one of the set of a listener consumer, a connection consumer or a receive consumer", "said listener consumer and said connection consumer and said receive consumer are of a single class". Since each of the event consumers can be of only one type, the limitation "said listener consumer and said connection consumer and said receive consumer are of a single class", is incorrect.

Claim 5 is missing "." (period) after "said connection request", line 5 of claim 5, line 14, page 25. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 1 recites the limitation "the execution of tasks invoked by said event consumers". There is insufficient antecedent basis for this limitation in the claim.

10. Claim 2 recites the limitation "each of said sockets in said second plurality of sockets". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. As per claim 15 merely claimed as a data structure *per se*, that is, descriptions or expressions of such a program and that is, descriptive material *per se*, non-functional descriptive material, and is not statutory because it is not a physical "thing" nor a statutory process, as there are not "acts" being performed. Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program's functionality to be realized, and is thus statutory. **Warmerdam**, 33 F.3d at 1361, 31 USPQ2d at 1760. **In re Sarkar**, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978). See MPEP § 2106(IV)(B)(1)(a).

As per claim 15, a data structure having data information is claimed. A data structure on a software medium does not overcome the statutory rejection. The claimed data structure with data does not relate to the physical entities.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 1, is rejected under 35 U.S.C. 103(a) as being unpatentable over "JT Router: Let your clients tunnel their way across the internet", October 1, 1997, pages 1- 12, Ajit Sagar, SYS-CON (Hereinafter Sagar-SYSCON) in view of Cathey et al. 5,778,182 (Hereinafter Cathey-AT&T and Guedalia et al. 5,535,878 (Hereinafter Guedalia-Roxio).

14. As per claim 1, Sagar-SYSCON teaches a method / computer readable storage medium / of handling events received at sockets in a computer server configured to serve clients (e.g., use of JTRouter to serve multiple clients, page 3, lines 15 - 24), the method comprising:

executing a module configured to detect events received at said sockets (e.g., software module to monitor activity at sockets, page 2, lines 25 - 46);

registering a first plurality of sockets with said module (e.g., use of vector having sockets, page 2, lines 25 – 46), wherein each of said sockets in said first plurality of sockets is associated with an event consumer (e.g., data stream objects for receiving data from sockets, page 3, lines 25 – 46);

notifying a first event consumer associated with a first socket in said first plurality of sockets when a first event is received at said first socket (e.g., informing data stream objects for receiving data from sockets, page 3, lines 25 – 46); and

invoking a task configured to facilitate handling of the first event (e.g., use of independent threads for handling the received data, page 3, lines 25 – 46),

wherein a first processor thread is shared among said first plurality of sockets for said module (e.g., use of single thread to handle requests from several sockets, page 2, lines 15 – 46).

However, Sagar-SYSCON does not specifically mention about a polling module configured to poll server sockets.

Cathey-AT&T teaches polling module configured to poll server sockets (e.g., col., 9, lines 21 – 54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Sagar-SYSCON with the teachings of Cathey-AT&T in order to facilitate polling of server sockets because the polling would help access the sockets of the server. The software used for polling the sockets would help retrieve information from the sockets. The information received from the sockets would be processed by the server.

Sagar-SYSCON and Cathey-AT&T do specifically mention about one or more processor threads are allocated to the execution of tasks invoked by the event consumers.

Guedalia-Roxio teaches one or more processor threads are allocated to the execution of tasks invoked by the event consumers (e.g., figure 7-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Sagar-SYSCON and Cathey-AT&T with the teachings of

Guedalia-Roxio in order to facilitate allocating one or more processor threads to the execution of tasks invoked by the event consumers because the processor threads would help execute the information for the event consumers. The tasks would continue supporting the event consumers because the tasks would get help from the processor threads on processing the information received from the socket.

15. Claim 2, is rejected under 35 U.S.C. 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio in view of Rueda et al. U.S. Publication 2002/0112076 (Hereinafter Rueda-Telecom-Research-Laboratory).

16. As per claim 2, Sagar-SYSCON teaches the claimed limitations rejected under claim 1. Sagar-SYSCON also teaches use of individual threads and registering a second plurality of sockets with said polling module and wherein each of said sockets in said second plurality of sockets is associated with an event consumer (e.g., several JTServers acting as a router for several other sockets, page 4, lines 18 - 38).

However, Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio do not specifically mention about a second processor thread is shared among the second plurality of sockets.

Rueda-Telecom-Research-Laboratory teaches a second processor thread is shared among the second plurality of sockets (e.g., figures 7, 29, use of individual agents to handle sockets of multiple network adaptors of the server).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio with the teachings of Rueda-Telecom-Research-Laboratory in order to facilitate a thread shared

among second plurality of sockets because the thread would help access the second set of sockets. The software used for accessing the second set of sockets would help to retrieve information from the second set of sockets. The information received from the second set of sockets would be process by the server.

17. Claims 3, 5-15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio in view of Geagon III et al. 6,735,634 (Hereinafter Geagan-Blue-Coat-Systems).

18. As per claim 3, Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio teach the claimed limitations rejected under claim 1. However, Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio do not specifically mention that the server is configured to stream media to the clients.

Geagan-Blue-Coat-Systems teaches that the server is configured to stream media to the clients (e.g., col., 3, line 3 – col., 4, line 67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio with the teachings of Geagan-Blue-Coat-Systems in order to streaming media to the clients because the clients would be able to get media information from the server. The server would be able to provide media information by streaming media to the clients using the sockets.

19. As per claims 5-15, Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio teach the claimed limitations rejected under claims 1 and 3. However, Sagar-SYSCON, Cathey-AT&T,

and Guedalia-Roxio do not specifically mention about establish a client connection through a second socket in response to said connection request and media streaming connections.

Geagan-Blue-Coat-Systems teaches establishing a client connection through a second socket in response to said connection request (e.g., col., 4, line 65 – col., 5, line 21), the first socket is configured to host connections with multiple clients simultaneously (e.g., col., 8, lines 50 – 67, col., 3, lines 34 - 48), the first event comprises a media streaming command (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38) and the first event consumer is a connection consumer configured to execute the media streaming command (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38) the first event comprises media stream quality information (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38) and the first event consumer is a receiver consumer configured to adjust said media stream according to said media stream quality information (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), a request for a media streaming control connection from a first client (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), a listener event consumer to receive a request for a media streaming control connection through an interface of a set of interfaces (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), establishing a media streaming control connection with the first client through a second interface of a set of interfaces configured for media streaming control connections with multiple clients (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), said second interface is associated with a connection event consumer configured to handle / receive a media streaming control command through the second interface (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), second socket is configured to receive media streaming commands from

multiple different clients (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), receiving from the first client at said second interface a media streaming command to stream media to the first client for receiving quality information regarding a media stream (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), a receiver module configured to receive media, from a media server, for streaming to the client through said third socket (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), establishing a media streaming quality connection with the first client through a third interface configured for media streaming quality connections with multiple clients (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38), the third interface is associated with a receiver event consumer configured to handle media streaming quality information (e.g., use of RTP, RTCP, RTSP, UDP, col., 3, line 36 – col., 5, line 38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio with the teachings of Geagan-Blue-Coat-Systems in order to establishing a client connection through a second because the client connection would help communicate information in response to the connection request. The client connection would be used to provide information to the client. The software module that handle media streaming information would help handle media streaming commands by receiving them and then processing them upon receiving. The software module would help receive the media streaming information being media stream quality information. Then, based on the feedback of the quality information, the software module would help adjust the streaming of the media contents. The well-known concept of managing and controlling the media quality information would help applications to control performance for

supporting media information to the clients. The well-known use of sockets would help provide interface between the clients and the software modules that handle media information for the client. The clients would be able to send/receive media information to the software modules through the sockets.

20. Claim 4, is rejected under 35 U.S.C. 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio, Geagan-Blue-Coat-Systems in view of "Official Notice".

21. As per claim 4, Sagar-SYSCON, Cathey-AT&T, and Guedalia-Roxio teach the claimed limitations rejected under claims 1 and 3. Sagar-SYSCON also teaches a listener consumer configured to handle a connection request (e.g., page 2, lines 35 – 48).

However, Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio, Geagan-Blue-Coat-Systems do not specifically mention about the different consumers are implementations of a single event consumer interface class.

"Official Notice" is taken that both the concept and advantages of providing the different consumers are implementations of a single event consumer interface class is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the different consumers are implementations of a single event consumer interface class with the teachings of Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio, Geagan-Blue-Coat-Systems in order to facilitate a single class having multiple code modules to handle the listener consumer functionality, the connection consumer functionality and the receiver consumer functionality. Usage of interface class, etc, well-known object oriented software

resources, would help implement functionality of the software modules within a single interface class. A single interface class would be used to program software modules that can be used for any of the software modules, i.e., software module implementing the listener consumer, software module implementing the connection consumer, and software module implementing the receiver consumer.

22. Claims 16-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III in view of "Official Notice".

23. As per claims 16-18, Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III teach claimed limitations rejected as disclosed above. However, Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III do not specifically mention about a first processor thread being a dedicated processor thread. "Official Notice" is taken that both the concept and advantages of providing the software resource being a dedicated processor thread is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the software resource being a dedicated processor thread with the teachings of Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III in order to facilitate polling of the sockets performed using a processor thread. By having a processor thread being dedicated would help poll the sockets without interruption, compared to a non-dedicated processor thread that is interrupted for other processing besides polling. Dedicated processor thread would help guarantee that a processor thread would always be there for polling the sockets.

24. As per claims 19-23, Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III teach claimed limitations rejected under claims 16. However, Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III do not specifically mention about usage a program object class. "Official Notice" is taken that both the concept and advantages of providing the listener module and the connection module being generated from a program object class configured to receive media streaming events is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the listener module and the connection module being generated from a program object class configured to receive media streaming events with the teachings of Sagar-SYSCON, Cathey-AT&T, Guedalia-Roxio and Geagon III in order to facilitate allocating necessary software resources to handle / receive media streaming events information. The well-known software resources, for example, usage of a task queue, a set of threads, object oriented classes and interface, etc., would help allocate necessary software resources to handle / receive media streaming events information. The mechanism to manipulate the software resources, for example, invoking or creating the software resources, would help use the software resources. By using a task queue, any invoked tasks can be queued. Allocating a set of threads would help execute tasks of the task queue. A task software resource would help handle the information assigned by the module listening the socket. Another task software resource would help create a socket for the module listening the socket and to create a software module to handle connection information of the socket. A task software resource would help perform the connection information of the socket. Another task software resource would help process the media information after the connection information is handled. The object oriented class software resources would help create the software modules to

handle listening and making a connection to the socket in order to handle / receive media streaming events.

Conclusion

The prior art made of record (below cited arts) and not relied upon is considered pertinent to applicant's disclosure.

Kallas et. al. 6,778,653, Nortel Networks, Maes et al., 6,801,604, IBM, Blom et al. U.S. Pub. 2003/0131353, Jacobus Lucent Technologies, 2001/0052008, Brassil et al., U.S. Pub. 2004/0210944, Salama et al. Cisco, also teach polling of sockets to implement RTP, RSVP, RTSP, SAP, SDP, protocols for streaming media, with QoS, for multiple media sessions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Haresh Patel

February 1, 2005

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100